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THE JOURNAL OF PHILOSOPHY
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REALITY AS EXPERIENCE

THERE are those who find that the assimilation to each other of the ideas of experience and reality is seriously hampered or even put out of court by the fact that science makes known a chronological period in which the world managed to lead a respectable existence in spite of not including conscious organisms. Under such conditions there was no experience, yet there was reality. Must we not, then, either give up the identification of the two conceptions, or else admit we are denying and sophisticating the plain facts of knowledge?

One is entitled to enter a *caveat* against any attempt to impose science, whether physical or psychological, *as* philosophy. One is moved to suggest that the greater the accumulation of interesting and professedly important details, the more urgent the question of what the import and interest are: the philosophic meaning of it all. Yet most empiricists would hardly be willing to adopt any philosophic position of which it could be clearly shown that it depends upon ignoring, denying or perverting scientific results.

Let us, then, analyze the situation which is offered to justify such charges. *It is a situation of which, by scientific warrant, it always is to be said that it is on its way to the present situation, that is, to 'experience,' and that this way is its own way.* The conditions which antecede experience are, in other words, already *in transition* towards the state of affairs in which they are experienced. Suppose one keep in mind the fact of *qualitative-transformation-towards,* and keep in mind that *this* fact has the same objective warrant as any other assigned trait (mechanical and chemical characteristics and relations, etc.). What, then, becomes of the force of the objection?

If, at some point, one shoves a soul-substance, a mind or even *a* consciousness[1] in between the prior condition of reality and experience, then, of course, the suggested implication—of identification of

[1] Consciousness is "the faint rumor left behind by the disappearing 'soul' upon the air of philosophy," James, this JOURNAL, Vol. I., p. 477.

reality and experience—does not hold. Reality and experience are separable, because this heterogeneous factor interposes and *makes* their difference. *It*, not reality, is responsible for the transformation; *it* somehow modifies reality and makes experience out of it, the resultant experience being heterogeneous to reality in the degree in which the intervening mind, subject, or substance, is interjective in its nature, and sudden or catastrophic in its workings. I am not concerned here with all the hopeless puzzles that now emerge—puzzles which constitute 'metaphysics' in the popular, pejoristic sense of that word. I am not even concerned with pointing out the difficulty, with respect to an experience so constituted, of picking out the features which belong to reality pure and uncontaminated, and those for which mind or consciousness, or whatever, is held accountable. I am only pointing out that such a conception is incompatible with the idea that the earlier chronological condition of reality is for philosophic purposes henceforth identifiable with reality. For philosophy, reality, on this basis, must include 'mind,' 'consciousness,' or whatever, along with the scientifically warranted early-dated world; and philosophy must worry through, as best it may, with the questions of a reality so hopelessly divided, by conception and definition, within and against itself. It is in any case a notion irrelevant to the particular problem under discussion.

I return to the supposedly strictly scientific objection. Unless some heterogeneous kind of reality is shoved in, then the early reality is at any and every point on its way to experience. It is only the earlier portion, historically speaking, of what later is experience. So viewed, the question of reality *versus* experience turns out to be only the question of an earlier version of reality against a later version,—or if the term 'version' be objected to, then, of an earlier rendering or expression or state of reality compared with its own later condition.

We can not, however, say an earlier reality *versus* a later reality, because this denies the salient point of *transition towards*. Continual-transformation-in-the-direction-of—this is the fact which excludes on the basis of science (to which we have agreed to appeal) any chopping off of the non-contemporaneously[2] experienced earlier

[2] I insert this word because it is essential. By hypothesis, this prior state now *is* experienced, namely, in science, or so far as experience becomes critical. This is the scientific fact on which are wrecked all strictly objectivistic realisms. It is also the fact which, on the basis of a *psychological* analysis of reality and the substitution of psychological science for physical science as a methodological clue, is perverted into idealisms. Of course, it may be pointed out that this psychological procedure always starts from the body and its organs, the senses, brain, muscles, etc.; so that, as Santayana says, idealisms

reality from later experience. So viewed, the question for philosophy reduces itself to this: What is the better index, for philosophy, of reality: its earlier or its later form?

The question answers itself: the property or quality of transition-towards, change-in-the-direction-of, which is, to say the least, as objectively real as anything else, *can not* be included in the statement of reality qua earlier, but is only apprehended or realized *in* experience. In a very real sense, the present experience of the veriest unenlightened ditch-digger does philosophic justice to the earlier reality in a way which the scientific statement does not and can not: can not, that is, as formulated knowledge. As itself vital or direct experience, as *man's* experience (which as geologist's or physicist's or astronomer's formulation is ignored), the latter is more valuable; and is truer in the sense of worth more for other interpretations, for the construction of other objects and the basing of projects upon them. The reason the scientist can suppress in his *statement* of the reality factors which the reality possesses, is just because (1) he is not interested in the total reality, but in such phases of it as serve as trustworthy indications of imports and projects, and because (2) the elements suppressed are not totally suppressed, but are right there in his *experience:* in its extra-scientific features. In other words, the *scientist* can ignore some part of the *man's* experience just because that part is so irremediably there in experience.

Suppose a theoretically adequate cognition of the early reality as early (prior to the existence of conscious beings) is attained: call this O. Call its properties a, b, c, d, etc. Call its laws, the constant relations of these elements, A, B, C, D, etc. Now since, by the evolutionary theory to which appeal is made, this O is in qualitative transformation towards experience, O is not reality complete, is not R, but is a selection of certain conditions of R. But, it may be replied, the theory of *evolution* does recognize and state these factors of transformation. So be it. But where is the *locus* of this recognition? If these factors are referred to O, to the prior object, we

hold that because we get our experience through a body, therefore we have no body. But, on the other hand, it may be pointed out that this body, the organism and the behaviors characteristic of it, is just as real as anything else, and hence that an account of reality based upon systematically ignoring its curious attitudes and responses (that is, a philosophy based preferentially upon physical sciences) is also self-contradictory. In such a situation, the important point would seem to be the significance of science or experience in its critically controlled forms, whether physically or psychologically directed. And here is where the pragmatic variety of empiricism with its interpretation of the place of reflective knowledge, or thought, in control of experience, seems to have the call.

have the same situation over again. We just have certain additional properties, *e, f, g,* etc., with additional functions, *E, F, G,* etc., which as referred to *O* are still in qualitative transformation. Something essential to reality is still omitted.

Recognize that this transformation is realized in present experience, and the contradiction vanishes. Since the qualitative transformation was towards experience, where else *should* its nature be realized save in experience—and in the very experience in which *O,* the knowledge object, is present.

The *O* as scientifically known is thus contained in an experience which is not exhausted in its quality of presenting *O* as object. And the surplusage is not irrelevant, but supplies precisely the factors of reality which are suppressed in the *O* taken as the chronologically prior thing. The only reason this is not universally recognized is just because it is inevitable and universally so. Only in philosophy does it require recognition; elsewhere it is taken for granted. The very motive and basis for formulating *R* as *O* is in those features of the experience which are not formulated, and which can be formulated only in a subsequent experience. What is omitted from reality in the *O* is always restored in the experience in which *O* is present. The *O* is thus really taken as what it is—a condition of reality as experience.

This immersion of a knowledge-object in an inclusive, vital, direct experience (which terms, like 'immediate,' are tautological, serving only as warnings against taking experience partially or abstractly) is the solution, I take it, of the problem of the transcendent aspect of knowledge. What is said of the overreaching, diaphanous character of knowledge in relation to its object is something which holds of the experience in which knowledge-and-its-object is sustained, and whose schematized, or structural, portion it is. Every experience thus holds in suspense within itself knowledge with its entire object-world, however big or little. And the experience here referred to is *any* experience in which cognition enters. It is not some ideal, or absolute, or exhaustive experience.

Thus, the knowledge-object always carries along, contemporaneously with itself, an other, something to which it is relevant and accountable, and whose union with it affords the condition of its testing, its correction and verification. This union is intimate and complete. The distinction in experience between the knowledge portion, as such, and its own experienced context, as non-cognitional, is a reflective, analytic distinction—itself real in *its* experienced content and function. In other words, we can not dispose of the 'margin' or 'surplus' of the experience in which knowledge is im-

mersed as being emotional and volitional (and therefore just psychological, and hence philosophically irrelevant) because the distinction between knowledge-in-relation-to-its-object, qua known, and other, supposedly irrelevant, features is constituted in one and the same subsequent reflective experience. The experience in which *O* is presented is one in which *O* is distinguished from other elements of the experience as well as held in vital connection with them; but it is not one in which the knowledge-function is discriminated from other functions, say, the emotional and volitional. If the later experience in which this discrimination is made is purely psychological, then the knowledge-function itself, as well as the emotional and volitional, is merely a psychological distinction, and again the whole case falls. In other words, whether taken directly as the scientist's experience or later as the philosopher's (or logician's) experience, we have the same type of situation: that of something discriminated as a condition of experience over against and along with those features of experience of which it is the condition.

If one is inclined to deny this, let him ask himself how it is possible to correct (supposed) knowledge of the earlier history of the globe. If *O* is not all the time in most real connection with the extra-scientific features of its experience, then is it isolated and final. If, however, it has to square itself up with them, if it enters as just one factor into a more inclusive present reality, then there are conditions present which make for accountability, testing and revision. To take *O* as an *adequate* statement of reality (adequate, that is, for philosophy) is to exalt one scientific product at the expense of the entire scientific procedure by which that product is itself legitimated and corrected.

JOHN DEWEY.

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THE GROUND OF THE VALIDITY OF KNOWLEDGE[1]

II. IMPLICATION AND THE MEANING OF 'IN EXPERIENCE'

THE origin of the demand for a transcendent has been presented in some detail in the preceding article of this series. There it was found that to guarantee the success of inferences of the alogical kind neither merely correct data in the sense of 'correspondence' nor the formal correctness of the inference process itself is sufficient. For the success of inference as a means of readjustment

[1] This is the second of a series of four articles dealing with this subject. The first appeared in this JOURNAL, Vol. III., No. 8.

there is demanded as external to it, and therefore as in some respect independent, a regularity and uniformity, persistent and permanent; and since this 'order' is not to be found in the series of conscious events, that is, in the *immanent*, a *transcendent*, which shall be identical with or 'bearer' of this permanent regularity, etc., is in turn demanded.[2]

In the first place, and perhaps side by side with other ways of regarding it, this demand for a transcendent can be *formulated* as an *implication*. Put in a propositional form, which may be not undeserving of criticism, it may be stated that if alogical knowledge is to be true, *i. e.*, successful, there must be a transcendent as agent, etc. Yet it must be emphasized that, although the implication can be stated in this way, it does not follow that it is itself one as between propositions. Rather the implication itself is of that which is the very condition of the success of alogical inference and knowledge put in propositional form; consequently its nature and 'root' may be of a kind widely different from that of the logical implication holding good of propositions and of classes. It may be an implication by a proposition of something which is not a proposition. To consider this matter in detail is, accordingly, my present purpose.

Now there are two ways in which, perhaps, not only both the demand for a transcendent and the response to this will each be looked upon, but also according to which it may be legitimate to regard each. Firstly, and admitting the demand to be one of implication, it may be held by some that this is to be *met* by *assuming* or *postulating* the transcendent; or, secondly, by others it may be considered that it is wholly a matter of implication with which we are dealing; that for the success of the inference an 'external' order is *implied*, and that this order *implies* a transcendent. But as an addendum to this second position it may be insisted upon by some that the bare implication is sufficient and that the *existence* of the transcendent can not be proved and is, in fact, indifferent, since we can and do make successful predictions without settling that point.

In order now to have a basis, as well for the possible criticism of a position like the last as also for the solution of our general problem, it is evident that the nature and structure of implication in general must be examined. With that done it may result that there are two species of this genus, both having to do with the 'coming true' of an inference-prediction or of alogical knowledge, but yet concerned in different ways with the success of such an instrumental-

[2] That in general this is the case may be both a well-known and a frequently accepted position. Compare, for example, Venn, 'Principles of Empirical Logic,' in various places.

adaptive and furthering-of-life means of readjustment. The two species may be traced back to different 'roots,' and in turn these roots found to supply different proximate needs, and although going to a common soil, drawing from this, however, a different sustenance.

To proceed to this examination, then, I begin with logical implication, because of the advantage offered by its greater familiarity. By logical implication I mean that which *includes* or is identical with the two kinds sometimes designated as *formal* and *material* respectively.[3] The material implication is simply a particular case of the formal. It is that relation in virtue of which it is possible, for example, to infer validly one *proposition* from one or more others or, in the case of a series, each member follows from the preceding according to a law. It holds without reference to that *truth* (or falsity) which consists in 'correspondence with an object' or in success. Logical implication, then, concerns the formal correctness of an inference-process consisting of 'material' propositions. If it be regarded as something, the discovery of which may serve as a means for the satisfaction of some need, say that of the readjustment of an experience at present characterized by conflict, then that need is in general one for *consistency,* although, as has been developed in my first article, this may in turn serve as a means for the satisfaction of an *ultimate alogical need* or end. But the readjustment would consist, first, in the removal of conflict and so in the conforming of the readjusted experience to the ideal of consistency or of rigorous logical implication.

We may now pass to the matter of the nature and structure of implication in general; in the attempt to state this, logical implication, as a possible species, will be of help. The characteristics of the genus, and therefore the 'conferentia' of the species, may be said to make up the following *generic structure,* difficult though it be to state this satisfactorily, and necessary as it is to put it in propositional form: That if it be asserted that p implies q, then (1) *that which is implied is both 'other than' and 'beyond' the implier and yet in some way 'in' the implier;* (2) *that 'this way' is characterized by the 'beyond' and the 'in' constituting, as it were, two points in a relation, which* (3) *relation is accordingly absolutely determinate and unequivocal, binary and asymmetrical.* Although it is necessary under the circumstances to state this generic structure in propositional form, and although likewise, if species of implication are found, the statement of these must be propositional, never-

[3] Compare, for example, Russell, 'The Principles of Mathematics,' in various places, especially Chapters II. and III. Also Couturat, 'L'Algebre de la logique,' Scientia Series.

theless the reference in the meaning of some of these statements, as they transcend themselves, may be to something not propositional or dependent on propositions, and yet implicative in nature.

With the logical as one possible species of implication, is it possible now to find another? In the logical the above generic structure must, of course, be present, but it is present as holding good between propositions and, perhaps, classes. Present and observed, or, let us say, with that which is implied made explicit, it constitutes the formal correctness of an inference procedure. Yet essential as such formal correctness may be, it does not constitute the sufficient condition for the success of alogical knowledge. For this a transcendent agent is implied as external to the inference, as something not propositional in nature and as in some respect independent, since the inference may cease to exist as a natural and temporal event, but the agent for its success *must* continue to exist, must persist. Now, since truth in the sense of this formal consistency may be possible without this transcendent ground, but *success,* even with formal consistency present, impossible without it, it may be said that if the demand for a transcendent be formulated as an implication, it is that which when traced to its roots is found to originate from a source having to do with the satisfaction of a need quite distinct from that for formal consistency, namely, the need for success in the termination of the process of readjusting subjective experience to something environmental. Accordingly, I conclude that there is another species of implication, coordinate with the logical, but, as springing from a different need, having its own differentia. This kind of implication, in agreement with the terminology of the previous paper and from its 'root,' may be called *alogical* or *biological.* Furthermore, the justification, first, of calling the demand for a transcendent an implication appears from its agreement with logical implication in respect to generic characteristics; in both something 'other than' and 'beyond' and yet in some way 'in' the judgments of an inference as implier is *necessitated.* Secondly, the justification of recognizing two species appears, for in logical implication this 'something,' which is both 'in' and 'beyond' that which implies it, is like in kind; both implier and implied are propositional. On the other hand, in 'biological' implication this 'something' 'other than' and 'beyond' the inference for whose success it is necessitated, even as independent, is unlike in kind to its implier; it is in some respect 'wholly external' to anything inferential or propositional in character and contrasts with this in its unexceptional uniformity and persistence. The inference transcends itself, pointing to an 'other' external to its own internal logical implication; yet the im-

plicative relation here as elsewhere bears the generic characteristics of determinateness and unequivocalness and asymmetry.

Regarding now the demand for a transcendent as such a biological implication, we can return to the consideration of the possible criticism above suggested, namely, that the *bare implication* is sufficient, that nothing need *exist* to 'fill it out,' etc. This is something like what the Kantian position would be—substance and cause implied—but the thing-in-itself as real causal agent left out. It is one possible type of pragmatism or of radical empiricism.

As concerning such a possible position it may be said that if it is a *proof* for the existence of a transcendent that is asked for, then there is as much proof in this case as in any other. For that which is implied is, in general, at least, provable, indeed, in one sense, *proved.* Also in the case of purely logical implication, for example, in a series, that which is implied has as 'full' an existence, ideal or subjective or what not, as that which implies, and this 'existence' is therewith proved. Quite analogously with another kind of implication, one whose basis concerns success and not merely formal correctness, and which is of something external to the inference itself and to conscious events and different in kind from these, the fact of the implication may be regarded as a *proof* for the *existence* of that which is implied. But it is a proof for that which of itself is not of the nature of proof, *i. e.,* of propositions. Its *formulation* may be capable of propositional proof, but, with that, such a proof may transcend itself, referring to something extra-propositional. On the other hand, if we return to the first possible criticism, that it is merely an *assumption* or *postulate* that the transcendent exists, made, indeed, as the most general presupposition of all the physical sciences and as a means of meeting the demands for a regularity, etc.; but that, therefore, there is no proof for this, at least *a tergo,* because not deducible from any more general principle, then this last critical conclusion may perhaps be admitted.

But the *necessity* of the *assumption* for all the physical sciences remains; and the reply may be offered that science does not attempt to do the impossible, namely, in this case to get an infinite regressus of propositional proof. For this reason and in this respect all truth is independent of proof, else were no truth possible; nor is absence of proof disproof; nor does an assumption determine the existence or non-existence of that which is assumed. Accordingly, from this standpoint, the justification of the assumption of the transcendent is not a logical, but a biological one; 'instrumental' knowledge is possible and of use provided only that more is assumed than is

proved; the assumption contains no contradiction; and that which is assumed may exist independent of the assumption.[4]

Free from being affected by criticisms from either of these sources, the existence of the transcendent as the *Inbegriff* of all not-individually-conscious in nature and as an independent, permanent, regular and uniquely causal agent, stands, *proved* by its 'biological' implication, as the ground for the validity, that is, the success of one kind of cognitive experience, the prediction-inference. Upon this existence the purely formal correctness of the inferential process in no way depends or is decided; upon the two together with correct data, success does depend.

At this point it is possible, however, that another objection may be raised by the radical empiricist and others that the transcendent as a matter either of assumption, or of implication, or of derivation from the concept of uniformity, is for these very reasons as well as for others 'in' experience.

In the first place, as bearing thereon, that which can not be denied is that the transcendent is not *'contained in'* the same experience, the particular inference-experience, whose success it conditions. It is in some respect 'other' than this latter, whether, if regarded as an *assumed* transcendent it is 'in' the assumption, or as 'implied' it is in some way 'other' than and yet 'in' the implier, or as derived from the concept of regularity it is 'in' the concept. But that is not to say that as 'in' it is 'contained in' any of these. Indeed, the transcendent itself may be 'other' than these and anything purely psychological, propositional, or logical upon which they may depend, so that, with an indefinite regressus of assumptions and inferences, etc., it is *always 'beyond.'* This can mean *only* that just as we have seen that nothing can be *deduced* from its existence, but only from the general *assumption* of this, and, conversely, that its existence has nothing to do with the formal correctness of the deduction but only with the success of this last, the transcendent is wholly 'outside' this logical and psychological series, in the sense that it is different in kind from and independent of it. In fact, that there was this difference in kind we have already seen to be implied and so proved biologically; it is implied that the transcendent is permanent, uniform, self-determining, etc.; the inference and conscious events are irregular, fleeting, etc.

And yet, if in this sense the transcendent is 'beyond' each and any and every cognitive experience, whether this be assumption, or

[4] Compare, as in essential agreement with the views expressed in this paragraph, some of the discussions contained in 'Die Dogmen der Erkenntnisstheorie,' F. Bon, Leipzig, 1902.

judgment, or concept, there also seems to be undeniably some manner of its being 'in' these individually and in general, and therefore 'in experience.' How can it be both 'in' and 'beyond' at the same time? And if it is a case of assuming or implying a transcendent, how can it be independent? Yet that it is this is necessitated as a condition of success. Otherwise each and every inference, if formally correct, would be the ground of its own success. How then can it be simultaneously dependent and independent? Both these questions and the answers to them strike, I believe, to the very root of the 'nature and structure' of the cognitive experience. Yet I would venture to suggest that the analysis both of the implications of alogical cognition and of implication itself enables us to understand how these seemingly paradoxical relations are possible.

To restate one of these problems somewhat, it may be said that, on the one hand, cognition, both as a matter of implication and for other reasons also, as I shall show subsequently, transcends itself, 'points to' an 'other' 'beyond' itself, and demands this 'other' as an 'independent' agent. Yet how can this 'other,' 'transcendent' as it is called, be 'independent' when, on the other hand, as implied, it must be 'in' experience? The possible solution of this difficulty comes first from the generic characteristic of implication; that that which is implied is 'in' the implier and yet 'beyond' in the sense that the very structure of the relation of implication is constituted by an, in some respects, really existing 'other,' which in some way also makes the implier what it is; and that the relation is at the same time determinate and unequivocal. Secondly, however, a solution emerges from the fact of there being two kinds of implication, springing from different bases; consequently, there is the possibility of two kinds of 'beyonds,' each with its differentia of really existing qualities, in one case fleetingness, etc., in the other permanence, regularity, but in both cases *proved* existences.

With the species, then, the generic paradox of implication that the essence of the implier should in some way be constituted by that which is 'beyond' and 'other than' itself, etc., grows in wonder. In one species, the logical, there is a mutual determination between implier and implied; the latter constitutes the essence of the former in much the same way as the former does of the latter; still the relation is asymmetrical.

But in 'biological' implication the paradox is most marked. Here the 'other,' the transcendent, implied as the condition for success, can not imply 'reflectively.' In fact, it is implied as that which is the very ground of the existence, that is, as the determinant of that which implies it; as that which is independent of, and yet the

ground of, its own implication. It is implied as the self-existent, to be brought 'into experience' only when it determines the existence of an experience which shall imply it. All this constitutes the *asymmetry* of biological as opposed to that of logical implication. Thus the question is answered as to how the transcendent can be both 'beyond' and 'other than' and yet 'in' an assumption, or judgment, or inference process. It is one 'term' in the relation of biological implication in which the subjectively limited experience is the other term. But there remains the question, how the transcendent can be independent, when, as either assumed or implied, it is 'in experience.' Is it not, therefore, dependent? The solution of this problem comes from the peculiarities of biological implication as a species. In accordance with the very distinctive asymmetry here it may be said that only the implication of the transcendent and not its existence is immediately dependent on that which implies it. Likewise, it may be said that as that which is known it is dependent on that which knows only for its being known. It does not 'follow from' that which implies it; only the *statement* of its existence does this. In general, to admit or assert that the transcendent is dependent in one respect on its implier, namely, in respect to its being implied, does not necessitate or warrant the assertion of or carry with it a dependence on this implier in all respects. If A is dependent on B in so far as it bears a certain relation to B, the dependence may be limited to the extent of this relation; it may be a dependence only in respect to and for this relation. A simultaneous dependence in one such respect and independence in all others is quite possible. 'Really existing things' can get into and out of different relations. They are dependent on other things only for their *relation* to other things. All this may be asserted to hold good of implication. We can, accordingly, conclude that, dependent for its implication upon an experience implying it, and for its being known upon an experience knowing it, the transcendent is independent in all other respects, as it is implied that it must be as a condition for the success of alogical knowledge. Thus, the second of our above questions is answered.

It may be admitted, then, that, at whatever point in the readjustment of experience the demand for a transcendent or the assumption of it may appear, it is 'in' this new experience in some respects. But an exact formulation of this relation is always possible, namely, that the transcendent is 'in' such a readjusting experience in the way that the implied is 'in' the implier; in a way, therefore, perfectly compatible with its being also 'beyond' at the same time. The further formulation is possible that, as

'beyond,' the transcendent is independent of its implier in every respect except for its implication and, therefore, for its being known. Both the 'in' and the 'beyond,' and the dependence and independence, in general, the nature of the relation between the transcendent and alogical cognitive experience, of whatever specific type the latter may be, can thus be stated definitely and exactly. It is a relation with the generic characteristics of all implication and the specific ones of 'biological.' The relation, constituted by a simultaneous 'in' and 'beyond' and quite compatible with a 'dependence' in one respect and an independence in others, is identical with *'transcendence'* from one standpoint, and with implication from another. It is, too, *determinate* and *unequivocal*, and the asymmetry is of a kind specifically different from that of logical implication. The alogical cognitive experience as a term in this specific relation transcends itself in accordance with the peculiarities of the relation. Accordingly, although 'beyond' experience, the *transcendent* as implied 'in' experience *is known.* It is not a thing-in-itself.

As a result of the distinctions and formulations which have been made in expounding the nature of the demand for a transcendent and of the response to this, etc., it is possible, therefore, to state the nature and structure of 'experience' with a sharper terminology. Thus, in my former article 'experience' was by definition limited to the bounds of the individual.

If, now, both because no one is willing to accept 'in' experience to mean 'contained within' these bounds, and because in the resolution of the conflicts in a first, purely subjective, experience, a second experience, in which a transcendent is assumed or implied, follows or is necessary, it be *claimed* that, therefore, with the transcendent 'in' this experience, the bounds of the individual experience have been broken or extended so as to *include* the transcendent; if this claim be advanced, even then *a perfectly definite statement* (1) *of the relation of the new and so-called wider experience to the first, and* (2) *of the relation of the transcendent to the subjectively bounded experience and in the wider experience, can be made.* The basis for such an exact formulation is contained in the analysis presented in the preceding paragraphs.

As to this claim, however, I think it is essentially the position advanced by some of the radical empiricists, but not always stated by them in a way to eliminate the obscurity of their meaning. It is their view that everything is 'in experience' and that nothing 'beyond experience' can be known; but they do not define the 'in.' For them experience at first is in some way impersonal, and out of it, by way of getting order and harmony and adjustments, etc., sub-

ject and object, self and not-self, the conscious and the non-conscious, the transitory and the constant appear in functional relation to each other, and as necessary to the resolution of the conflicts in the 'living flow' of experience. But in criticism of this it is to be emphasized as an undeniable fact, I think, that it is not this experience with which we actually start, but that such an impersonal experience is one *constructed* by way of solving the problems presented in a purely subjective and individual experience.

Accordingly, it is possible with clearness and definiteness, first, to define and retain this individual experience as a term; then to define this wider experience as that *beyond which nothing is known, and as that which contains both the self,* with its subjective experience, *and the transcendent,* the universal not-self or whatever it may be called, as the necessary correlative function of self or subject, etc.

Then such a wider and all-inclusive experience will bear *the same relation* to the individual experience as, put in another way, the whole as a wider experience consisting of individual experience plus its implications bears to individual experience as a part. In a similarly exact manner it is possible to formulate the other relations which were suggested above.

In reality, the difference is largely one of terminology, and the relations are essentially the same; but it is relations with which we are most concerned and which we wish to get at, while terminology is a matter of advantage or disadvantage. Here, however, the disadvantage seems to lie with those who use experience in the wider sense as including all. The disadvantage comes from the twofold extension of, and therefore possible ambiguity in the use of, the term experience. It becomes especially noticeable, when, because of this ambiguity, the statement that everything is 'in experience' is interpreted to mean that it is within the bounds of individual experience. Such an interpretation, identical as it is with that of subjective idealism, is not undeserved nor should it be unexpected by those who, although they make extensive and most frequent use of the term experience as designating the balm for all our metaphysical woes, nevertheless fail to tell us, except in a very nebulous way, both what they mean by it and what its 'formula' and structure are.

In my next article I shall consider the questions of the 'transcendence of knowledge' and the 'correctness of data.'

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SOCIETIES

SECTION OF ANTHROPOLOGY AND PSYCHOLOGY OF THE NEW YORK ACADEMY OF SCIENCES

Report of the Secretary

THE Section met at Princeton, on February 26, 1906, in conjunction with the New York Branch of the American Psychological Association. Professor MacDougall occupied the chair. The following are abstracts of the papers read:

Method in Esthetics: A. L. Jones.

A discussion of the relative value of the empirical and the metaphysical methods.

A Psychological Theory of the Origin of Religion: Irving King.

Psychologically, religion can not be considered as the outgrowth of a special instinct or perception. It is rather a construct in various individuals, appearing in successive generations through the agency of certain stimulating social situations which are perpetuated by social heredity. The religious consciousness may be called an attitude which has been built up with reference to certain types of objective conditions. It is most nearly related to the valuational attitudes, of which it may be said to be a specialization. The particular aim of this paper was to show how the origin of the sense of value could be traced in primitive life and how the religious consciousness could be shown to be differentiated therefrom. It was held that the problem was chiefly one of determining the influences which would tend to deepen and render permanent the value of consciousness. It was pointed out that the tribe or social group furnishes all the conditions needful for the transformation of simple fleeting values into permanent religious ones.

The Detection of Color Blindness: Vivian A. C. Henmon.

This paper will be published in full in a later issue of this Journal.

Color Sensations and Color Names: R. S. Woodworth.

The results of Woodworth and Bruner tend to the conclusion that the color sense is essentially the same in widely different branches of the human species, and in particular that the more primitive races show no special deficiency in the perception of blue. The contrary conclusion of Rivers, based on his tests of different races, is susceptible of some adverse criticism. The absence of a name for blue in many languages, and its late development in all, are to be ex-

plained on psychological rather than physiological principles. The fundamental principle involved is that of the objective reference of sensations. Color is conceived and named not as a quality of sensation, but as a quality of objects. Moreover, it is not a directly practical quality of objects, but owes its importance to its power of serving as a ready sign of more practical inner qualities and conditions of objects. The tendency is to name the inner and practically important quality rather than the sign; thus, we speak of well-done and under-done meat rather than of brown and red meat, and of clear and cloudy skies rather than of blue and gray skies. A further principle that must be borne in mind is the 'law of dissociation by varying concomitants.' Unless a color appears in a variety of objects it is not likely to receive an abstract name. In primitive conditions of life, red and yellow, being the colors and distinguishing marks of animals and animal substances, as well as of ripe fruits, appear in sufficiently varied and important situations to account for their having received names early. Green is principally important as a sign of growing vegetation, and need, therefore, have no name except that which distinguishes the growing from the dead or dried condition. Blue is principally important as a sign of the weather, and is, therefore, represented by a weather name rather than by a color name. The development of an abstract name for blue seems to have resulted from the multiplication of blue objects, dependent on the introduction of blue pigments.

The Practise Curve as an Educational Method: J. McKeen Cattell.

Curves were shown giving the records of two children copying at maximum speed the same passage and a new passage on the typewriter for 365 consecutive days, and for memorizing ten German words and the English equivalents for 140 days. Experiments were made once a month to measure the transference of practise to other functions, and the curves were shown. It was argued that the practise curve has certain advantages as an educational method. The child plots his curve and becomes interested in his progress, viewing his performance in an objective fashion; he works with maximum effort and attention for a short time; his main competition is with himself as he seeks to surpass his record. The experiment can be so arranged that all the work of the child centers about it—the three *R's* and the rest—supplying a unity and an interest that are often lacking in our schools.

A New View of 'Mental Function': Howard C. Warren.

From the genetic standpoint the biological functions may be classed as specific or general. The latter include nutrition, repro-

duction and defense, which occur in various forms throughout all species. The distinction suggests a similar division of the functions of consciousness. The problem of the paper was to distinguish the fundamental or general mental processes from the complex. Psychologists lay too much stress on the human senses, which are only particular evolutionary products and furnish merely the natural-history material of the science. Even the division into cognitive, affective and conative is unsatisfactory, since these processes are combinations of more fundamental ones. The discussion led to the formulation on genetic and analytic grounds of five fundamental functions, *viz.*, sensibility, intensity modification, quality differentiation, association and discrimination, as the simple processes which the data furnished by sensory and central stimulation undergo. The reader examined the character of these and showed their lack of adequate physical analogy. He analyzed the part they play in attention, perception (association of differentiated elements), imagination, conception, judgment, reasoning, appreciation, self-consciousness, etc. From the standpoint of these functions, the relation between genetic and analytic psychology appears in a new light, as does also the distinction between mental functions and elements. The study of physiology, though important for psychology, is involved in it only as physics and chemistry are involved in physiology. The recognition of such fundamental functions affords the only satisfactory starting-point for an independent science of psychology.

The 'Four Powers': D. S. MILLER.

Arnold tells us that human nature in its civilized completeness requires the development of four powers: the power of conduct, the power of intellect and knowledge, the power of social life and manners, the power of beauty. This involves (what Arnold hardly acknowledges) the independence of beauty as a form of well-being, an end-in-itself. And to the list, on a fair survey of human life, we must add the power of the affections, the power of religion, the power of bodily life and the senses. Finally, it has to be noted that conduct in its full sense includes all; it compasses human life and assigns a place to each of the powers, from morals, in the narrower sense, to beauty.

The Nature of Judgment: W. H. SHELDON.

The linguistic expression of judgments, in so far as it is uniform throughout all languages, can be used as a guide in detecting the essential features of the process of judgment.

Reality as Possible Experience: M. PHILLIPS MASON.

The concept of reality as possible experience, developed in Royce's 'The World and the Individual,' is not, as Royce would have us

believe, the same in spirit as it is in Kant. For Kant the interest lies in the possible, the fundamental conditions of experience, while for Royce the emphasis is laid rather on experience itself; and for that reason he makes a distinction between actual and possible experience, between experience which is actually experienced by human beings and that which is not experienced by any human being, but which might be if conditions were other than they are. Since Royce finds possible experience, taken in this sense, equivalent to no experience so far as human beings are concerned, it seems to him necessary to assume an absolute experience to include the purely possible experience, thus setting aside possible experience as an inadequate concept of reality. Had he taken the concept in the Kantian sense it would not have been necessary for him to develop a concept of the absolute. For possible experience as a system of the conditions of experience is a sufficient solution of the problem of experience. A higher unity of what these conditions involve with experience is unnecessary and based on a mistaken motive. The only reason there is for developing a concept of reality is to unify experience, and such a unity we have in the fundamental conditions of experience, the world of possible experience.

Misconceptions of Realism: W. P. MONTAGUE.

Realism is the theory that *esse* is not *percipi*, that objects do not depend for their existence on being experienced, and that, as a consequence, they can exist continuously through those intervals when no one is aware of them. This view is often falsely interpreted to mean (1) that consciousness can not change or in any way affect objects; (2) that real objects are transcendent things-in-themselves, lacking all experienced qualities; (3) that real objects can only be inferred and not perceived. In answer to the first of these supposed implications, which would commit realism to the doctrine of the epiphenomenality of consciousness, it is sufficient to point out that one thing can, so far as its existence is concerned, be independent of another thing or of its relations to that thing and can yet be affected by it. Knowledge of an object at one moment can enable the knower to change it at a later moment without prejudice to its continued existence during the intervals when it is not known. As regards the second implication, it may easily be seen that the quality of a thing has no necessary connection with the fact that it is perceived, except on the idealist's assumption that consciousness confers qualities as well as existence upon its objects, which is just what realism denies. As to the third misconception of realism, it is somewhat more excusable than the others because the majority of philosophical realists

have been tempted by the supposed exigencies of the physiological theory of sense-perception to adopt an epistemological dualism or representative theory of knowledge. Realism is not, however, bound up with dualism and might without the slightest inconvenience defend the common-sense view that perceptual consciousness extends to and reveals real objects outside the organism and is not confined to the comprehension of internal copies or ideas of these.

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REVIEWS AND ABSTRACTS OF LITERATURE

The Afferent Nervous System from a New Aspect. HENRY HEAD, W. H. R. RIVERS and JAMES SHERREN. *Brain*, 1905, XXVIII. Pp. 99–115.

The Consequences of Injury to the Peripheral Nerves in Man. HENRY HEAD and JAMES SHERREN. *Ibid.* Pp. 116–338.

These two articles are important to psychologists and should be read by all who are interested in the analysis of pressure and skin sensations. The material upon which the articles are based is a series of cases in which there was injury or division of some of the peripheral sensory nerves.

A sample observation which led to the research is as follows: "When the median nerve is divided, sensation is entirely lost over a considerable part of both index and middle fingers. Over the palm, within the area said by anatomists to be supplied by this nerve, sensation is usually diminished and not completely abolished. In a similar manner, division of the ulnar nerve produces complete insensibility of the little finger and of a variable portion of the ulnar aspect of the palm; but partial loss of sensation is found over a large area of the palm and the ulnar half of the ring finger. Such is the usual statement of surgeons and anatomists" (p. 100).

This statement of the results of injury led the authors to put to themselves two questions: 'What is meant by diminished sensibility?' and 'To what is it due?' Accounts of conditions in various forms of nerve lesions are given which indicate the answers to these questions. The diminished sensibility was found to be a true loss of certain sensations and the retention of others. Thus from careful study of the cases the authors have been able to differentiate some sensory elements which in normal people are with difficulty or not at all discriminated.

The experimental results are given from about eighty cases of injuries to the peripheral nerves, particularly to those of the hand and arm. Forty-six text figures illustrate the result, and there are eight excellent tables. The first article gives a general theoretical consideration of the results of all the work, and the second article is an account of the observations

and experiments. We shall consider first the results of the experiments. In this article the work is divided as follows:

1. Nerve supply of the palm of the hand.
2. Recovery of sensation after injury to the nerves of the hand.
3. Recovery of sensation after incomplete division of the nerves of the hand.
4. Nerve supply of the forearm.
5. Injuries to the brachial plexus.
6. Loss of sensation in the arm from division of posterior nerve roots.
7. Nerve supply of the lower limb.
8. Deep sensibility.
9. Sensations of heat and cold.
10. The compass test.
11. Hair sensibility.
12. Hyperalgesia.
13. Changes in the skin that follow injury to peripheral nerves.
14. Changes in the nails after injury to peripheral nerves.
15. Paralysis and other muscular changes.
16. Theoretical.

Most of these sections have observations of interest to psychologists, but we shall consider only the main points.

If a mixed (sensory and motor) nerve supplying any portion of the body is cut, there is found to be a complete loss of all kinds of sensation from part of the region supplied by the nerve. Pain, pressure, light touch and temperatures are not felt, muscles can not be moved, and the positions of the parts are not appreciated. If, however, only the branches supplying the skin be divided, the muscular branches remaining intact, the muscles can be moved, movement properly sensed, and the part is sensitive to pressures. In such a case (pp. 214, 327), in which the radial and external cutaneous nerves were divided in the forearm, the authors found that all the movements of the hand and fingers were perfect, but "the skin over the back of the thumb and the radial half of the back of the hand were insensitive to light touch, to prick and to all forms of heat and cold. But over the whole of this area pressure was at once appreciated. . . . Touch with the blunt head of a pin was localized with remarkable accuracy, but our patient could not distinguish pressure with a head from a prick with a point of a pin, nor could he distinguish between pressures with a point of a pin and with a steel rod 2 c.m. in diameter (p. 327). Even when separated to 5 c.m. and applied transversely, the compasses were appreciated as a single 'push' or focus of pressure. Any stimulus dragged across the surface so as to move the skin over underlying parts was at once appreciated. . . . But if the skin was lifted the same method of stimulation entirely failed to evoke any response, a proof that whatever sensation had been previously present was due to the underlying structure." A number of cases which were observed demonstrate that the pressure sensations are carried by the nerves which supply the muscles, etc., and that these nerves accompany the tendons.

This condition, in which all forms of skin sensibility are lost, but pressures are appreciated, has been called *deep sensibility*. The conclusion which is psychologically important is 'that so long as the sensibility of the skin is unaffected, it is impossible to investigate the sensations evoked by pressure.' It is even difficult to determine with certainty the condition of the sense of passive position in the joints when superficial sensibility is present. The skin should be totally insensitive to all stimuli before deep sensibility can be satisfactorily tested, a condition which greatly limits the possible opportunity of examination.

Bounding such an area in which there is present only deep sensibility, there is a zone, of varying extent in individual cases, in which there is loss of sensory appreciation of light touch and of medium temperatures. Such sensibility has been called by the authors *protopathic*. In this area a prick may be so disagreeable that the patient withdraws his hand. "He complains that it causes a feeling of pins and needles, not only at the point pricked, but also widely over the intermediate zone. Asked to locate the spot pricked, he may be able to do so, but complains that the pain produced seems to him to be spread over a large surface, or even to be in two places at once, such as the base of the finger and the middle of the palm. Moreover, when tested with compasses, the points can not be distinguished as causing two sensations, even when separated from one another to the greatest extent possible within the intermediate zone." Water below 20° C. is felt as cold, but it makes no difference whether the water be 0° C. or 18° C. Above 45° C. or 50° C. water is felt as hot, but it is doubtful whether or not there is true heat sensation. The patients call the sensation hot or burning. Intermediate temperatures are not felt. In the normal area, of course, all forms of sense stimuli are appreciated. Those which are peculiar to the normal area are light touch, the appreciation of twoness, as for example in the double-point threshold, and the medium temperatures. This form of sensibility is given the name *epicritic*.

Occasionally patients were found in whom the area of loss of protopathic sensibility did not entirely cover the area of loss of deep sensibility. In such a case the skin is sensitive to light touches, but there is no appreciation of pressures as such. One instructive case of this character is that (p. 108) of a patient in whom an operation 'produced profound loss of sensation to prick over the one half of the face, unaccompanied by an equivalent loss of sensibility to light touch. Here there could be no doubt that the patient could appreciate warmth, but not heat, and he many times stated that a temperature of 55° C. was neither hot nor cold, but that 34° C. was undoubtedly warm.'

If a nerve which has been cut is sutured and the wound heals well, there is a gradual return of normal (epicritic and protopathic) sensibility to the anesthetic and partially anesthetic areas. First, the totally anesthetic area gradually grows smaller, and there is a return of the pressure sensation. The recovery begins in about ten weeks, and in about ten weeks later pressures may be felt over the whole area. Then

there is a restoration of the sensibility to prick, to pain, to extremes of heat and cold. At this time the disagreeable radiating effects of the stimuli are present. Finally, the forms of epicritic sensibility begin to be felt in the area. The line of demarkation between the normal and abnormal is no longer well marked, and the area gradually grows smaller. Eventually, after two to four years, there is a complete return to normal function.

The characters of the lesions in most of the cases which appear at the hospitals are such that the results are not simple. Moreover the patients are not good observers. Experiments must be made of the conditions as they are, not as one would like to have them. The authors felt the necessity, therefore, of a carefuly localized lesion and of a skilled observer for the determinations of the sensory changes. For this reason one of them (Head) had his radial and external cutaneous nerves divided near the elbow to be able to compare the normal sensitivity and the sensory changes following the operation. The results of this experiment—which was most painful and not without considerable danger—are given in part in the present article, but a fuller account is promised. We shall await with much interest the complete report of this work. "The knowledge of the properties of deep sensibility gained from this experiment," it is said (p. 282), "enabled us to understand the full significance of the various forms of residual sensation discovered after division of peripheral nerves." The promise is made that 'in a subsequent paper it will be shown that, so far as protopathic sensibility is concerned, at least three end organs exist and each of these reacts only to a specific stimulus.'

The conclusions which seem justified from the experimental results are as follows (pp. 111, 114, 298): The sensory mechanism in the peripheral nerves is thus found to consist of three systems:[1]

1. "Deep sensibility, capable of answering to pressure and to the movement of parts, and even capable of producing pain under the influence of excessive pressure, or when the joint is injured. The fibers, subserving this form of sensation, run mainly with the motor nerves, and are not destroyed by division of all the sensory nerves to the skin."

II. "Protopathic sensibility, capable of responding to painful cutaneous stimuli and to the extremes of heat and cold." "It also endows the hairs with the power of reacting to painful stimulation." "This is the great reflex system, producing a rapid, widely diffused response, unaccompanied by any definite appreciation of the locality of the spot stimulated." "These fibers regenerate rapidly after the ends of the nerves have been reunited; if the operation has been successfully performed sensation begins to return within from seven to ten weeks. In any peripheral nerve the distribution of the protopathic fibers usually overlaps greatly the area supplied by the fibers of the adjacent nerves."

III. "Epicritic sensibility, by which we gain the power of cutaneous localization, of the discrimination of two points, and of the finer grades

[1] These excerpts are taken from both papers, and as here given do not conform in every instance to the sequence in which they originally occur.

of temperature, called cool and warm." "These fibers regenerate more slowly than those which subserve protopathic sensibility after reunion of a divided nerve, and sensation does not usually begin to return in less than six months under the most favorable conditions. The distribution of these fibers in the larger peripheral nerves, such as the median and ulnar, overlaps little compared with a great overlapping of the protopathic supply." "As soon as a sensory impulse reaches its first junction in the spinal cord, it becomes shunted into tracts devoted to the conduction of impulses grouped in a way different from that found in the peripheral nerves. It is no longer a question of protopathic, epicritic or deep sensibility; the tracts in the central nervous system are devoted to the conduction of impulses concerned with pain, heat, cold and touch."

"The system we have called protopathic in the skin is one with the afferent fibers of the sympathetic as they supply the viscera. In both cases the sensation is badly localized, radiates widely and is frequently referred to parts other than those stimulated. . . . The whole body within and without is supplied by the protopathic system. The fibers of this system in the skin may be spoken of as somatic, those to the internal organs as visceral protopathic fibers. . . . Another set of afferent fibers peculiarly associated with impulses of movement and pressure exist in connection with the Pacinian organs. In the body and limbs, an analogous system is found peculiarly susceptible to pressure, to the localization of movement and to the appreciation of position. The fibers of this system run in conjunction with the motor nerves. In addition to these two systems, which are distributed to all parts of the body within and without, the surface of the body only is supplied by a third system, which we have called epicritic."

This work illustrates well the value of a study of the abnormal for the understanding of normal processes. Not only is normal psychology of value for the understanding of the abnormal, but pathological or abnormal psychology can give new points of view to the student of normal mental life. It is safe to say that the work of Head and his collaborators is the most important contribution to the study of skin and pressure sensation which has appeared in many years.

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The Experience Philosophy. WARNER FITE. *Philosophical Review,* January, 1906. Pp. 1–16.

Professor Fite is convinced that a fundamental fallacy underlies all 'experience-philosophy,' by which term he means any philosophy based exclusively on experience and declaring that the object of consciousness has no real existence apart from its presence in consciousness. His critique is directed, first, against the assumption of the series of experiences as *real* and, second, against the *reality* of the present experience.

The series of experiences, although taken only as a working basis, must still involve a belief that the past fact of experience is in some

way more valid than a past fact which can be inferred, but has not been experienced. The author questions the validity of this belief. According to his analysis, the only difference in the two facts is in the recognition which may attach itself to the past experience, and recognition is found to be only a degree of *clearness* which the image possesses together with the idea that the experience is *mine,* which means that my body is the central figure of the experience. In so far as this distinction signifies anything beyond the degree of clearness, it means that my body is a *reality* apart from experience. The past fact that the tree which I see felled before me once stood, is equally real, and my judgment is reached by the same sort of reasoning from the same sort of premises.

That recognition is a variable phenomenon we must all admit, yet practicaly we *do* attach greater value to things remembered and recognized than to things unrecognized or inferred, and without departing from the author's own terms, it would seem that a clearly recalled experience might fit into one's scheme of thought more conclusively than would be possible in the case of an inference denied the factor of recognition.

The second point, concerning the reality of the present experience, turns on the question as to what is really 'given' on which one may proceed to build. The present state of consciousness may be largely a matter of sense-perception, so called; it may also be inferential, imaginative or reproductive in nature. Are these all equally 'given,' and, if so, why not build one's world on imaginary as well as on sensational elements? As a matter of fact, one restricts the *real* or 'given' to the perception of objects in the outer world. On what is this distinction of validity based? Here, again, it is merely a matter of clearness, *i. e.,* mechanical relations of my body and other bodies, and if this means anything beyond additional associations it means a reality outside my own consciousness.

Now it is freely admitted that this step from conscious object to object of consciousness is not easy. Indeed, nothing less than the problem of knowledge is here involved. But, questions the author, is there any more reason for throwing away the tree which inference tells me produced the sensation, than the man in whom it was produced? In so far as the distinction subject-object is valid, the series is valid. But neither is an *ultimate.* Indeed, the search for an ultimate is an *ignis fatuus.* There is no such thing. How can one conceive a foundation stone which supports all, yet which nothing supports? There is not even a logical necessity to search for an ultimate, as most philosophers have wrongly apprehended. Induction and deduction are not two opposed methods, but two phases of one. Let us, then, accept all such data as seem useful, judging validity by usefulness. It is not a firm foundation that we need strive for, but a democracy of data all leading equally well from one to the other—an idea which, by the way, is not new to students of modern positivism.

And so our author concludes we should, 'with the realists, hold that reality is not limited to experience, and that the progress of science

represents . . . an advance in genuine knowledge of an external world; and, with the idealist, we should hold that, nevertheless, *our* objective world is a construction; and, with the pragmatist, that it has been constructed in response to the demands of practical life.'

It is a rather hard pill to swallow, this mixture of realism and idealism. Realism it is, apparently, whenever I take the standpoint of external observer and look at myself and others, idealism it is when *in propria persona* I become the percipient subject. Still, since Professor Fite regards these only as more or less temporary foundations on which he proposes to build—to be consistent he might have said, data which he intends to expand—we can perhaps abide the further question until the structure has been reared, or the field at least surveyed.

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Les états mystiques. BRENIER DE MONTMORAND. *Revue Philosophique,* July, 1905. Pp. 1–23.

In the first ten pages of this article the mystical ecstasy of the *orthodox* mystics is described in four degrees: quietude, union, ecstasy, spiritual marriage. It is the division made by Ste. Theresa in the 'Châteaux Intérieurs.' In the second section (pp. 10–14) are summarized the views of Ribot, Godfernaux, Récéjac and Leuba on ecstasy. In the third and last section (pp. 14–23) Montmorand states his conception and his explanation of the mystical ecstasy.

His first claim is that the psychologists named above 'confuse under the name ecstasy phenomena of very different nature.' He would make the following five classes:

1. Physiological ecstasy, or the ecstasy of philosophers. It is the outcome of hypertrophied attention. Archimedes during the capture of Syracuse is given as an instance.
2. Hypnotic, or Buddhic, ecstasy.
3. Cataleptic ecstasy.
4. Hysteric ecstasy.
5. Mystic ecstasy, of the orthodox mystics.

Although these five kinds of ecstasy show marked external analogies, they have, we are told, evidently no common measure. Physiological ecstasy is characterized by extreme intellectual activity, while Buddhic ecstasy and cataleptic ecstasy are accompanied by loss of consciousness. Hysterical ecstasy 'is made up of hallucinations which follow each other in two alternating tableaux,' while physical ecstasy is devoid of hallucination. We need not stop to examine the adequacy of his classification and the correctness of the accompanying descriptions. Let us simply say that Montmorand did well to remind those of us who treated ecstasy a little too much 'in the lump' of the more or less important differences which exist between its several varieties.

The main thesis of the author is not that there are several sorts of ecstasy, but that the orthodox mystical ecstasy differs essentially and funda-

mentally from the other kinds. It differs from them in its cause and in its effects. Mystical ecstasy is neither the result of a direct stimulation of the nervous system (Buddhic ecstasy); nor of an hypertrophied attention (ecstasy of philosophers); nor yet a 'detached fragment' of a morbid process (hysterical ecstasy). Its effects separate it also from the other kinds of ecstasy: they are singularly beneficent, physically as well as morally. Mystical ecstasy is 'a kind of vivifying bath out of which one issues humbler and more courageous, better tempered for effort and for action.'

In order to account for what seems to him peculiar in the apparition and in the effects of the mystical ecstasy, Montmorand uses the familiar conception of subconscious activity. "In the first period of ecstasy, subconscious activity brings to the self, in the form of symbolic hallucinations (visions, revelations, internal speech), what Meyers calls *subliminal messages*. Later on, the ordinary consciousness [la conscience personnelle], becoming somnolent, is enriched, unbeknown to itself, by emanations from the subliminal consciousness, which, when the trance is over, blossom forth in generous resolves, holy desires, in virtues apparently spontaneous." To this explanatory use of the subconscious probably no one would object, provided nothing *extrasubjectif* be meant by subconsciousness. But that may not be the meaning of the author. On page 20 there is a surprising paragraph, somewhat ambiguously worded, which may mean that the author is not satisfied with a purely subjective conception of the subconscious, that he holds rather to the views of Meyers or to the hypothesis of James (conclusions of 'The Varieties of Religious Experience'). The suspicious sentence runs thus, "Those theologians appear to me to be better advised who admit that in the mystical ecstasy, knowledge is realized by supernatural means rationally inexplicable and quite incompatible with the process by which knowledge is usually gained."

One would have to be either very ignorant of the resources of psychological science or passionately desirous of believing in the supernatural to find support for this theological opinion in the facts described in this article. The independence of the mystical ecstasy from voluntary control and its two effects, physical well-being and moral elevation, do not call for a supernatural explanation.

JAMES H. LEUBA.

BRYN MAWR COLLEGE.

JOURNALS AND NEW BOOKS

VIERTELJAHRSCHRIFT FÜR WISSENSCHAFTLICHE PHILOSOPHIE UND SOZIOLOGIE. November, 1905, Band 29, Heft 4. *Die Grundlagen des naturlichen Monismus bei Karl Christian Planck,—Schluss* (pp. 447–494): H. PLANCK. – A rather detailed discussion of space and time, causality, morality and human life, in which Spencer and

Planck are compared, with the conclusion that the latter is, first, more successful in showing the necessary relation between the fundamental law of identity and the law of evolution, and, second, more consistent in recognizing the consequences of the theory of evolution for any theory of society. *Zur sozialwissenschaftlichen und socialpolitischen Bedeutung der Naturwissenchaften, besonders der Biologie* (pp. 495–512): W. SCHALLMEYER. – The deficiency among office-holders in scientific and especially biological knowledge is noted, and the resulting conservation, and failure to discover and apply scientifically the means, or to determine scientifically the ends, of the state. *Besprechungen.* F. Jodl, *Lehrbuch der Psychologie:* F. KRUEGER. J. A. Barth, *Wissenschaftliche Beilage zum XVI. Jahresbericht (1903) der Philosophischen Gesellschaft an der Universität zu Wien:* C. VON BROCKDORFF. P. Natorp, *Platos Ideenlehre, Eine Einführung in den Idealismus:* A. AALL. *Philosophische Zeitschriften.*

Barth, P. *Die Elemente der Erziehungs- und Unterrichtslehre auf Grund der Psychologie der Gegenwart dargestellt.* Leipzig: J. A. Barth. 1905. Pp. xii + 515.

Böhme, Jacob. *Morgenröte.* Herausgegeben von Joseph Grabisch. Munich: R. Piper und Co. Pp. xxii + 280.

Brotherus, K. R. *Immanuel Kants Philosophie der Geschichte.* Helsingfors: Aktiebolaget Handelstryckeriet. 1905. Pp. vii + 136.

Congress of Arts and Science, Universal Exposition, St. Louis, 1904. Vol. III., *History of Language, History of Literature, History of Art.* Pp. x + 682.

Frost, Walter. *Der Begriff der Urteilskraft bei Kant.* Halle: Max Niemeyer. 1906. Pp. 135.

Mach, J. *Kritik der Freiheitstheorien.* Leipzig: J. A. Barth. 1906. Pp. viii + 287. 4.50 M.

Ollé-Laprune, Leon. *La raison ou le rationalisme.* Paris: Perrin. 1906. Pp. liii + 269.

Ostwald, Wilhelm. *Individuality and Immortality.* New York: Houghton, Mifflin and Co. 1906. 75 cents.

Revel, P. Camille. *Le hasard, sa loi et ses conséquences dans les sciences et en philosophie.* Paris: Chacormac. 1905. Pp. 393.

Rivaud, N. *Les notions d'essence et d'existence dans la philosophie de Spinoza.* Paris: F. Alcan. 1906. Pp. 216.

NOTES AND NEWS

THE following is the preliminary program of the conference of college and normal school teachers of psychology in Wisconsin and Michigan, to be held at Mt. Pleasant, Michigan, on May 24 and 25: 'Ideals in the Organization of Elementary Courses in Psychology,' J. R. Angell; 'Ele-

mentary Courses from the College Point of View,' J. R. Farley; 'Courses in Psychology for Students of Education,' N. A. Harvey; 'The Purpose of an Elementary Course in Psychology,' R. C. Hughes; 'The Relation of Psychology to Pedagogy,' E. G. Lancaster, John McManis; 'Some Advances in the Teaching of Pedagogy,' George Randels; 'Differences between College and Normal School Courses,' H. H. Schroeder; 'What Experiments are of most Value in Cultivating Careful Introspection,' M. A. Small; 'The Teaching of the Concept,' F. N. Spindler; 'A Phase of Genetic Psychology,' W. A. Trettien; evening address—'The Educational Value of Psychology,' J. R. Angell. Changes desired in statements of subjects announced in this program, or additional subjects, should be sent to E. C. Rowe, Mt. Pleasant, Michigan, or to J. R. Farley, Appleton, Wisconsin, before May 1, when the final program will be issued. In order that arrangements may be made for entertainment, all persons expecting to attend the conference should send their names to E. C. Rowe, Mt. Pleasant, Michigan, before May 20, if possible.

THE Philosophical Society of Berlin is preparing to honor the philosopher Fichte by the dedication of a monument to his memory. Fichte was largely influential in the organization of the Berlin University. He was its first rector, and the unveiling of his monument will celebrate the centennial of his entrance upon the duties of that office. Professor Gabriel Campbell, of Dartmouth College, is a member of the committee to receive contributions for the Fichte monument. He will be glad to receive offerings large or small which may be credited to an institution or to an individual. So many of our professors and teachers recognize in the University of Berlin an *alma mater* that some expression of appreciation from America would be a well-deserved and graceful courtesy at the Berlin centennial.

THE Academy of Moral and Political Science, at Naples, offers a prize of one thousand francs for the best unpublished essay on either of the three following topics: (1) 'The Concept of the Infinite in the Light of Recent Investigation'; (2) 'The Doctrine of Self-consciousness in Psychology, in Epistemology and in Metaphysics'; (3) 'The Philosophy of Language in Patristic and Scholastic Philosophy.' All papers must be written in either Italian, Latin, or French, and must be received by the *Segretario,* Filippo Masci, not later than September 30, 1907. Competing contributors may put their names upon their papers submitted, or papers may be presented anonymously; in the latter case, however, the paper must be designated by a motto which shall be enclosed also in a sealed envelope containing the writer's name. The papers for which prizes are awarded will be published in the *Atti,* and the authors will receive one hundred reprints. The envelopes containing the names of the authors of the papers which receive neither the prize nor the *accessit* will be destroyed. All competing papers will be preserved in the archive and no one will be permitted to copy from any paper except the author of it after satisfactory identification.

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Volume III. No. 5. March 1, 1906.

The Nature of Consistency. G. A. TAWNEY.
Feeling as the Object of Thought. KATE GORDON.
Discussion: The Meaning of Identity, Similarity and Nonentity: A Criticism of Mr. Russell's Logical Puzzles. W. P. MONTAGUE.
Reviews and Abstracts of Literature. Journals and New Books. Notes and News.

Volume III. No. 6. March 15, 1906.

The Moral Individual. J. DASHIELL STOOPS.
On 'Feeling.' GEORGE M. DUNCAN.
Societies: The Fourteenth Annual Meeting of the American Psychological Association. VIVIAN A. C. HENMON.
Reviews and Abstracts of Literature. Journals and New Books. Notes and News.

Volume III. No. 7. March 29, 1906.

Recent Discussion of Feeling. JAMES ROWLAND ANGELL.
Cognitive Thought and Immediate Experience. J. A. LEIGHTON.
Discussion: The Quarrel about Transcendency. W. H. SHELDON.
Reviews and Abstracts of Literature. Journals and New Books. Notes and News.

Volume III. No. 8. April 12, 1906.

The Ground of the Validity of Knowledge. EDWARD G. SPAULDING.
Discussion: Professor Calkins's Mediation. MARY S. CASE.
Reviews and Abstracts of Literature. Journals and New Books. Notes and News.

Volume III. No. 9. April 26, 1906.

Thought Revealed as a Feeling Process in Introspection. E. A. NORRIS.
Memory Types of Colorado Pupils. WILL GRANT CHAMBERS.
Discussion: Thought and Immediacy. F. C. S. SCHILLER.
A Note to Professor Angell. HENRY RUTGERS MARSHALL.
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